

REMARKS

Claims 1-124 are pending in the current application. In an office action dated August 20, 2001, Applicants' amendment dated May 21, 2001 was objected to under 35 U.S.C. §132 as introducing new matter into the disclosure. Claims 78-94 and 108-124 were objected to for indicating "apparatus" instead of "method." Claims 1-124 were rejected under 35 U.S.C. §112, 1st paragraph; claims 78-87, 90, 108-117, and 120 were rejected under 35 U.S.C. §112, 2nd paragraph. Claims 1-43, 48-58, 62-63, 65-81, 86-94, and 108-124 were rejected under 35 U.S.C. §103(a) over Tiedemann, Jr., et al. (U.S. Patent 5,392,287) in view of Schwendeman (U.S. Patent 5,396,537), and claims 64 and 95-107 were rejected under 35 U.S.C. §103(a) over Tiedemann, Jr., et al. (U.S. Patent 5,392,287) in view of Applicants' alleged admission of prior art. The office action further noted that should claims 78-94 be found allowable, claims 108-124 will be objected under 37 CFR 1.75 as being a substantial duplicate thereof.

Applicants further note that the office action failed to mention claims 44-47, 59-61, and 82-85.

In the current amendment, with respect to the claims objections, Applicants amended claims 78, 81, 88, 91, 93, 108, 111, 118, 121, and 123 to overcome the rejection. With respect to objection to the new matter and claim rejection, after giving a due consideration to the Examiner's arguments, Applicants respectfully traverses the rejections for the reasons detailed below.

Objection to new matter under 35 USC §132

The office action alleges that the amendment to the specification correcting a misprint made in the original specification "raises new matter issue because the scope of the invention has been changed completely since the amendment implies that a sequence number is not equivalent to a signature, however, there is no disclosure in

the present application supporting that a sequence number is not equivalent to a signature." (Office action, ¶ 3, pp. 2-3.)

Applicants respectfully disagree with these assertions because a sequence number and a signature had been distinguished in the present application even before the amendment.

In the "Description of the Related Art" section, Applicants described use of *sequence numbers* in overhead messages to conserve power at a mobile station in communication systems with centralized control. Consequently, one of ordinary skill in the art understands the concept, generation and use of sequence numbers. (Application, p. 3, line 25-p. 4, line 16). Applicants emphasized that sequence numbers, are used in cellular services with a *central location*, at which the programming of overhead messages and sequence numbers at each base station is controlled. (*Id.*, p. 4, lines 17-31.) Applicants then discussed difference in overhead messaging in a communication systems accessing decentralized network, and concluded, that *means different from the sequence numbers* are needed in the communication systems accessing decentralized network to achieve power and bandwidth saving. (*Id.*, p. 5 line 1-p. 6, line 3).

A concept of a *signature as the means* for achieving the power and bandwidth savings in the communication systems accessing decentralized network was introduced in the "Summary of Invention" section. (*Id.*, p. 7, lines 1-22). This concept is then explained in the "Detailed Description of Preferred Embodiment" section. Applicants note that the use of the term signature is consistent throughout the specifications as applied to the communication systems accessing decentralized network, with the exception of misprint on p. 14, lines 1 and 4, which was corrected by the amendment dated May 21, 2001.

The office action recited to application p. 14, lines 18-20: "A signature can be generated by hashing the message is a well-known hashing function to produce a sixteen or thirty-two bit signature," to support an assertion that "the citation only explains how a signature can be generated, it does not explain how a signature is different from a sequence number." (Office action, ¶ 3, p. 3.)

Applicants respectfully disagree. One of ordinary skill in the art understands that the sequence number is generated at a *central location* and *changes by a pre-determined amount* when a content of an overhead message changes, as described. (Application, p. 4, lines 17-31.) In contrast, a signature is used in a decentralized network, the signature is generated by an entity in the decentralized network *without a supervision of a central location*, (*id.*, p. 5, line 1-p. 6, line 3; p. 7, lines 2-13; p. 14, lines 14-18) and *does not necessarily* change by a pre-determined amount by a when a content of an overhead message changes. (*Id.*, p. 14, line 18 p. 15, line 3.) Consequently, one of ordinary skill in the art understands that there is a difference in a place of generating and possibly a manner of generating the sequence number and the signature.

The office action further alleges: "a careful review of the disclosure of the present application revealed that the concept of signature per se, e.g., what is a signature? has not been defined in the present application." (Office action, ¶ 3, p. 3.) Applicants respectfully disagree. Applicants read the provision for description as requiring: "to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected to make and use the same." (37 CFR 1.71.) Therefore, 37 CFR 1.71 does not mandate rigorous definitions of terms used. Because as argued above, one of ordinary skill in the art understands the concept of signature and the difference between a signature and a sequence number, 37 CFR 1.71 is satisfied.

Applicants further note that the office action failed to consider additional arguments made in support of the amendment being a correction of misprint, which are repeated here for the Examiner's convenience.

Furthermore, the sentences using the term "sequence number" are not consistent with the specification. The sentence on p. 13, line 27 – p. 14, line 1 reads as follows:

"Since it is not desirable to have the mobile unit wake up, receive the overhead message, and decode it only to determine that the overhead message is the same as the previous message that was decoded earlier, in the interest of conserving battery power, a sequence number is transmitted along with the overhead message."

The sentence is contained in a description of FIG. 2. However, no sequence number is illustrated in FIG. 2. On the contrary, a signature is clearly illustrated in FIG. 2.

The sentence on p. 14, lines 4-7 reads as follows:

"In many instances, the mobile unit will go back to sleep after receiving the signature because the signature is the same as the sequence number received the last time the mobile unit woke up."

The sentence implies that the signature is equivalent to a sequence number. However, the application explains that the signature is not necessarily equivalent to a sequence number. (P. 14, lines 18-20.)

Furthermore, Applicants note that the term signature is used consistently in the claims.

Consequently, the amendment corrected misprint; therefore, no new matter was introduced. Therefore, the Examiner is respectfully requested to withdraw the rejection.

Claims Objection

Claims 78-94 and 108-124 were objected to for indicating "apparatus" instead of "method." The office action further requested to insert -- respective -- before "signature" in claims 81, 88, 111, and 118 on line 1, claims 82, and 112 on line 3, claims 84, 86, 87, 89, 114, 116, 117, and 119, line 2. Applicants amended claims 78, 81, 88, 91, 93, 108, 111, 118, 121, and 123 to overcome this objection. Because the amendment corrected claims 78, 81, 88, 91, 93, 108, 111, 118, 121, and 123 dependencies, no new matter has been added.

Because all of the stated grounds for objection have been properly accommodated, the Examiner is respectfully requested to withdraw the objections.

Claim Rejection under 35 U.S.C. § 112(1)

Claims 1-124 were rejected under 35 U.S.C. §112(1), by the office action alleging: "the concept of signature has not been clearly defined in the present application in such a way as to reasonably convey to one skilled in the relevant art how to make and use the present invention." (Office action, ¶ 5, p. 4-5.)

Applicants respectfully disagree. Applicants, as the office action admits, have been using the term signature consistently throughout claims. Consequently, one of ordinary skill in the art would, if not understanding a concept of a signature from the claims, be prompted to consult the rest of the application to ascertain the meaning of the concept of a signature. As argued above, one of ordinary skill in the art would ascertain that a signature characterizes an overhead message (application, p. 7, lines 2-13, p. 13, line 27-p. 14, line 7), and is generated by an entity in the decentralized network *without a supervision of a central location*, (*id.*, p. 5, line 1-p. 6, line 3; p. 7,

lines 2-13; p. 14, lines 14-18, p. 14, line 18 p. 15, line 3.) Consequently, one of ordinary skill in the art would understand the concept of a signature form the application, as required by 37 CFR 1.75(d)(1).

Therefore, the Examiner is respectfully requested to withdraw the rejection.

The office action further alleges: "The present application, by not having a clear definition on the term signature, is left open to interpretation of the term signature to be equivalent to sequence number since the resent application also lacks of a proper disclosure [sic] providing a clear differentiation between signature and sequence number." (Office action, ¶ 5, p. 5-6.)

Applicants respectfully disagree. As argued above, one of ordinary skill in the art would understand the concept of a signature form the application. In the "Description of the Related Art" section, Applicants described use of *sequence numbers* in overhead messages to conserve power at a mobile station in communication systems with centralized control. Consequently, one of ordinary skill in the art understands the concept, generation and use of sequence numbers. (Application, p. 3, line 25-p. 4, line 16.)

Additionally, Applicants emphasized that sequence numbers, are used in cellular services with a *central location*, at which the programming of overhead messages and sequence numbers at each base station is controlled. (*Id.*, p. 4, lines 17-31.) Applicants then discussed difference in overhead messaging in a communication systems accessing decentralized network, and concluded, that *means different form the sequence numbers* are needed in the communication systems accessing decentralized network to achieve power and bandwidth saving. (*Id.*, p. 5 line 1-p. 6, line 3). Additionally, the term sequence number is used in the "Description of the Related Art" and the term signature from the "Summary of the Invention" forward. Consequently,

one of ordinary skill in the art would understand that the two concepts are different, and would also understand the differences.

Therefore, the Examiner is respectfully requested to withdraw the rejection.

Claim Rejection under 35 U.S.C. § 112(2)

Claims 78-87, 90, 108-117, and 120 were rejected under 35 U.S.C. §112(2), as allegedly being indefinite for failing to particularly point out and distinctly claims the subject matter, which applicant regards as invention. The office action notes that the term "the message capsule" used in the claims has insufficient antecedent basis.

Applicants amended claims 78, 81, 88, 91, 93, 108, 111, 118, 121, and 123 to correct the deficiency to overcome this objection. Because the amendment corrected claims 78, 81, 88, 91, 93, 108, 111, 118, 121, and 123 dependencies, no new matter has been added.

Because all of the stated grounds for objection have been properly accommodated, the Examiner is respectfully requested to withdraw the objections.

Claim Rejection under 35 U.S.C. § 103(a)

The office action noted, that for the purpose of applying prior art, the term signature was understood as being equivalent to sequence numbers. Consequently, Applicants' traversed the office action rejections in the same manner. However, based on Applicants' arguments in sections "Objection to new matter under 35 USC §132" and "Claim Rejection under 35 U.S.C. § 112(1)" of this amendment, Applicants maintain that signature is not equivalent to sequence numbers.

Given that objection to a new matter under 35 USC §132, and claim rejection under 35 U.S.C. § 112(1) can be overcome by the Applicants, the Examiner is respectfully requested to consider the subject matter added in the analysis. MPEP § 2163.06.

The office action further noted, that for the purpose of applying prior art, claims 78, 81, 88, 91, 93, 108, 111, 118, 121, and 123 were examined as being dependent on method claim 1. Applicants amended these claims as described in section "Claims Objection."

Claims 1-43, 48-58, 62-63, 65-81, 86-94, and 108-124 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Tiedemann, Jr., et al. (U.S. Patent 5,392,287) in view of Schwendeman (U.S. Patent 5,396,537).

In regards to claims 1-43, 48-58, 62-63, 65-81, 86-94, and 108-124 the office action admits that Tiedemann, Jr., et al. fails to disclose that the respective sequence number is separate from the respective message. The office action asserts that such deficiency is cured by Schwendeman, disclosing a transmitter system in which: "a message 200, which *includes* a message capsule 204, that is transmitted to one or more remote units 130 (mobile stations) includes a respective sequence number 208 (signature) (i.e., signature capsule) that is *not included* in the message 200 (i.e., is separate from the respective message) for purposes of reducing transmission overhead in the paging communication channel 122 (figures 1 and 2 and column 16 lines 38-43). (Office action, ¶ 8, p. 9, emphasis added.) Applicants respectfully disagree.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference must teach or suggest all the claim

limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, *not in Applicant's disclosure*.

Applicants first asserts that, even assuming, *arguendo*, that the references could be combined, the references would failed to teach or suggest all the claim limitations. Schwendeman recites: "The transmitted message 200 typically *includes* identification and control in formation 202, as well as message data information." (Schwendeman, col. 6, lines 48-50, emphasis added.) Consulting Fig. 2, and accompanying text it is clear that the identification and control in formation 202 includes the *message sequence number* 208. (Col. 7, lines 17-63).

Additionally, comparing Fig. 2 and accompanying text of Schwendeman, (col. 6, line 44-col. 8, line 34) with Fig. 2 and accompanying text of Tiedemann, Jr., et al., (col. 5, line 65-col. 6, line 6, col. 7, lines 2-12), it is entirely clear that the messages have essentially equivalent structures.

Consequently, Schwendeman fails to disclose a transmitter system in which a "the respective signature being separate from the respective message" as per Applicants' invention as claimed in claim 1.

Because, as discussed, Schwendeman fails to teach each and every element of Applicant claim 1.

The office action further alleged that: "it would have been obvious to a person of ordinary skill in the art at the time the invention was made to slightly modify the teachings of Tiedemann, Jr. et. al, with the teachings of Schwendeman in order to provide an overhead messaging method and system in a wireless communication system in which considerable power can be saved at a mobile station when sequence numbers associated with respective overhead messages are provided separately,

thereby allowing a receiving mobile station to be capable of determining if it is necessary to receive the overhead message associated with a respective sequence number just by comparing the respective sequence number with a previously received sequence number without the need to go throughout the whole the process of receiving the overhead message, consequently, conserving power. (Office Action, ¶ 8, p. 9). Applicants respectfully disagree.

As discussed, there is no substantial difference between the messages of Tiedemann, Jr. et. al, and Schwenderman. Consequently, there is no need to "slightly modify the teachings of Tiedemann, Jr. et. al, with the teachings of Schwenderman."

For the above reasons obviousness *prima facie* has not been established, and the Examiner is respectfully requested to withdraw the rejection.

Applicants note that analysis of claims 3-43, 48-56, 58, 62, 66-81, 86-94, 108-111, 116-124, are analyzed upon the assumption that Tiedemann, Jr., et al. and Schwendeman could be combined, and that the combination would teach all the limitations of the invention as claimed by the Applicants. Because Applicants showed the assumption to be incorrect, the analysis of claims 3-43, 48-56, 58, 62, 66-81, 86-94, 108-111, 116-124 is likewise incorrect.

For the above reasons obviousness *prima facie* has not been established, and the Examiner is respectfully requested to withdraw the rejection of claims 3-43, 48-56, 58, 62, 66-81, 86-94, 108-111, 116-124.

Claims 64, and 95-107 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Tiedemann, Jr., et al. (U.S. Patent 5,392,287) in view of alleged Applicant's admission of prior art.

In regards to claims 64 and 95 the office action asserts that Tiedemann, Jr., et al. teaches that: "a receiver 122 (mobile station) (figure 3) receives a sequence of

messages (message capsule), each respective message containing a respective sequence number (signature) generated by a transmitter 10 in a base station (figure 1), and wherein the receiver compares the respective sequence number (signature) of any message with at least one sequence number." (Office action, ¶ 9, pp. 13-14.)

Applicants respectfully disagree. Since the office action recognizes that: "a receiver 122 (mobile station) (figure 3) receives a sequence of messages (message capsule), each respective message containing a respective sequence number (signature) generated by a transmitter 10 in a base station (figure 1)," the sequence numbers can be recovered from the message. Therefore, there is no need to generate the respective sequence numbers by hashing the message capsule.

The office action further asserts that: "Tiedemann, Jr et al. disclose the use of hash function when *assigning slot numbers* (column 2 lines 48-52), the use of said hash function is done at the base station. (Office action, ¶ 9, p. 14, emphasis supplied.) Applicants agree. Applicants, however, fail to understand how "the use of hash function when *assigning slot numbers*" is relevant to generating a *signature* by hashing the message using a hashing function. Consequently, Applicants asserts that no clear understanding of issues has been developed.

The office action admits that Tiedemann, Jr., et al. fails to disclose that the respective sequence number (signature) can be generated or calculated at the receiver (mobile station) from the sequence of messages (message capsules). The office action asserts that such failure is cured by Applicants' invention because Applicants: "admit as being well known the use, at a mobile unit, of a general purpose microprocessor to hash a received message in order to generate a signature (page 14 lines 18-24, and page 9-15)." (Office action, ¶ 9, p. 14).

Applicants strongly disagree with such a representation of the application. The portion recited by the office action reads:

"Referring to Figure 3, an overhead message is changed at step 302 at the BS 210. At step 304, at the BS 210 a signature is generated for the overhead message that was changed. A signature can be generated by hashing the message using a well-known hashing function to produce a sixteen or thirty-two bit signature. Hashing a message to generate a signature can be performed by a signature generator using well-known arithmetic logic (not shown) or a general purpose microprocessor (not shown) and need not be described in detail here. One of ordinary skill in the art would recognize that the signature may be generated using other forms of logic not described herein."

Therefore, first, the recited portion describes generation of a signature "*at the BS 210*," and not at the mobile station as the office action erroneously asserts.

Additionally, Applicants describe that *use of a hashing function* is well known in the art, not that *generation of a signature by a hashing function* is well known in the art.

Because the office action misinterpreted the application description, the office action failed to show generation of a signature using hashing function at the mobile station.

The office action concludes that "it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the hash function, used by Tiedemann, Jr., et al. in the base station in the processor 162 of the receiver 122 (mobile station) in order to generate a signature from the received message as recognized by Applicant's disclosure to be well known." (Office action, ¶ 9, p. 14.)

Applicants respectfully disagree. Since the office action recognizes that: "a receiver 122 (mobile station) (figure 3) receives a sequence of messages (message capsule), each respective message containing a respective sequence number

(signature) generated by a transmitter 10 in a base station (figure 1)," the sequence numbers can be recovered from the message. Therefore, there is no need to generate the respective sequence numbers by hashing the message capsule.

Additionally, as discussed above, Applicants did *not* admit that generation of a signature by a hashing function from a message capsule at the mobile station is well known in the art.

Therefore, there is no motivation to modify Tiedemann, Jr., et al.

For the above reasons obviousness *prima facie* has not been established, and the Examiner is respectfully requested to withdraw the rejection of claims 64, and 95.

Applicants note that analysis of claims 96-107, are analyzed upon the assumption that Tiedemann, Jr., et al. and Applicant's disclosure of prior art could be combined, and that the combination would teach all the limitations of the invention as claimed by the Applicants. Because Applicants showed the assumption to be incorrect, the analysis of claims 96-107 is likewise incorrect.

For the above reasons obviousness *prima facie* has not been established, and the Examiner is respectfully requested to withdraw the rejection of claims 96-107.

Claim Rejection under 35 U.S.C. §101 Double Patenting

The office action further indicated that should claims 78-94 be found allowable, claims 108-124 will be objected under 37 CFR 1.75 as being a substantial duplicate thereof.

Applicants respectfully disagree. Claims 78, 81, 88, 91, and 93 as amended depend from claim 65. Claims 108, 111, 118, 121, and 123 as amended depend from claim 95. Because claim 65 is patentably distinct from claim 95, it follows that claims

78, 81, 88, 91, and 93 are patentably distinct from claims 108, 111, 118, 121, and 123. Consequently, the Examiner is respectfully requested to withdraw the rejection.

Additional Subject Matter:

Applicants further note that the office action failed to mention claims 44-47, 59-61, and 82-85. Consequently, Applicants asserts that no clear understanding of issues has been developed with respect to these claims.

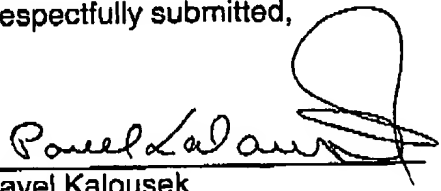
CONCLUSION

All of the stated grounds for objection and rejection have been properly accommodated and traversed. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections, and that they be withdrawn. It is believed that a full and complete reply has been made to the outstanding office action, and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

Dated: 29 November 2001

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APPENDIX A

79. An apparatus as claimed in claim [1] 65, wherein the message capsule is
2 one of a sequence of message capsules carrying overhead messages.

81. An apparatus as claimed in claim [1] 65, wherein the signature is
2 generated by hashing the message capsule.

88. An apparatus as claimed in claim [1] 65, wherein the signature is
2 generated by assigning a value stored in a counter.

91. An apparatus as claimed in claim [1] 65, wherein the message comprises
2 an overhead message indicative of base station parameters in the wireless
communication system.

93. An apparatus as claimed in claim [1] 65, wherein the message comprises
2 an overhead message indicative of system-wide parameters of the wireless
communication system.

108. An apparatus as claimed in claim [1] 95, wherein the message capsule is
2 one of a sequence of message capsules carrying overhead messages.

112. An apparatus as claimed in claim [1] 95, wherein the signature is
2 generated by hashing the message capsule.

118. An apparatus as claimed in claim [1] 95, wherein the signature is
2 generated by assigning a value stored in a counter.

121. An apparatus as claimed in claim [1] 95, wherein the message comprises
2 an overhead message indicative of base station parameters in the wireless
communication system.

123. An apparatus as claimed in claim [1] 95, wherein the message comprises
2 an overhead message indicative of system-wide parameters of the wireless
communication system.